

CROSS-REFERENCE TO RELATED APPLICATION

This application is a continuation application of application Serial Number 10/453,320 filed
and now abandoned
June 3, 2003, ~~currently pending.~~
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61. (new) For use in conjunction with a two-part electrical connector comprising a male component and a female component for receiving the male component and having spaced, parallel transversely extending apertures extending from a first side to a second side therethrough, a retainer clip for securing the male component in engagement with the female component of the connector comprising:

spaced parallel feet spaced a predetermined distance apart equal to the distance separating the transversely extending apertures through the female component of the connector and having a length extending from the first side to the second side;

legs extending upwardly and inwardly from the feet adjacent the first side;

male connector engaging arms extending from the ends of the legs remote from the feet parallel to and above the feet and having a length extending transversely across the male connector;

camming members extending downwardly from the ends of the male connector engaging arms remote from the legs and positionable adjacent to the second side;

means connecting the two sides of the retainer clip; and

the feet, legs, engaging arms, camming members, and connecting means defining a continuous wire spring retainer clip having a spring action which normally biases the retainer clip to hold the male component and the female component of the two part electrical connector suitably engaged with a continuously applied force such that the engagement resists shock and vibrational forces which might otherwise dislodge the engagement therebetween.

⁷~~2~~. (new) The retainer clip according to claim ⁶~~1~~ wherein the connecting means comprises a handle which facilitates flexure of the engaging arm away from the feet thereby facilitating removal of the retainer clip.

⁸~~3~~. (new) The retainer clip according to claim ⁶~~1~~ wherein the feet are selectively positionable with respect to one another to facilitate engagement of the feet with the apertures extending through the female component of the connector.

⁹~~4~~. (new) The retainer clip according to claim ⁷~~2~~ wherein the handle is adapted to open the retainer clip responsive to the application of a force thereto.

¹⁰~~5~~. (new) The retainer clip according to claim ⁶~~1~~ wherein the camming members flex the retainer clip into an open configuration upon engagement with the male component of the two part electrical connector to enable the retainer clip to be extended over the two part electrical connector and thereafter release the retainer clip to resiliently clamp the male and female components of the two part electrical connector in engagement with one another.

¹¹~~6~~. (new) The retainer clip according to claim ⁶~~1~~ wherein the feet comprise toes which are extendable upwardly adjacent to the second side.

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(new) For use in conjunction with a two-part electrical connector comprising a male component and a female component for receiving the male component and having spaced, parallel transversely extending apertures extending from a first side to a second side therethrough, a single retainer clip for securing the male component in engagement with the female component of the connector comprising:

spaced parallel feet spaced a predetermined distance apart equal to the distance separating the transversely extending apertures through the female component of the connector and having a length extending from the first side to the second side;

legs extending upwardly and inwardly from the feet adjacent the first side;

male connector engaging arms extending from the ends of the legs remote from the feet parallel to and above the feet and having a length extending transversely across the male connector;

camming members extending downwardly from the ends of the male connector engaging arms remote from the legs and positionable adjacent to the second side;

means connecting the two sides of the retainer clip; and

wherein the feet, the legs, the engaging arms, the camming members, and the connecting means defining a single, continuous wire spring retainer clip having a spring action which normally biases the retainer clip to hold the male component and the female component of the two part electrical connector suitably engaged with a continuously applied force such that the engagement resists shock and vibrational forces which might otherwise dislodge the engagement therebetween.

¹³_{8.} (new) The retainer clip according to claim ¹²₇ wherein the connecting means comprises a handle which facilitates flexure of the engaging arm away from the feet thereby facilitating removal of the retainer clip.

¹⁴_{9.} (new) The retainer clip according to claim ²₇ wherein the feet are selectively positionable with respect to one another to facilitate engagement of the feet with the apertures extending through the female component of the connector.

¹⁵_{10.} (new) The retainer clip according to claim ¹³₈ wherein the handle is adapted to open the retainer clip responsive to the application of a force thereto.

¹⁶_{11.} (new) The retainer clip according to claim ¹²₇ wherein the camming members flex the retainer clip into an open configuration upon engagement with the male component of the two part electrical connector to enable the retainer clip to be extended over the two part electrical connector and thereafter release the retainer clip to resiliently clamp the male and female components of the two part electrical connector in engagement with one another.

¹⁷_{12.} (new) The retainer clip according to claim ¹²₇ wherein the feet comprise toes which are extendable upwardly adjacent to the second side.

18/3.

(new) An electrical connector comprising:

a male component;

a female component for receiving the male component and having spaced, parallel transversely extending apertures extending from a first side to a second side therethrough;

a retainer clip for securing the male component in engagement with the female component of the connector comprising;

spaced parallel feet spaced a predetermined distance apart equal to the distance separating the transversely extending apertures through the female component of the connector and having a length extending from the first side to the second side;

legs extending upwardly and inwardly from the feet adjacent the first side;

male connector engaging arms extending from the ends of the legs remote from the feet parallel to and above the feet and having a length extending transversely across the male connector;

camming members extending downwardly from the ends of the male connector engaging arms remote from the legs and positionable adjacent to the second side;

means connecting the two sides of the retainer clip; and

wherein the feet, the legs, the engaging arms, the camming members, and the connecting means ^{define} ~~defining~~ a single, continuous wire spring retainer clip having a spring action which normally biases the retainer clip to hold the male component and the female component of the two part electrical connector suitably engaged with a continuously applied force such that the engagement resists shock and vibrational forces which might otherwise dislodge the engagement therebetween.

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~~14~~. (new) The electrical connector according to claim ~~13~~¹⁸ wherein the connecting means comprises a handle which facilitates flexure of the engaging arm away from the feet thereby facilitating removal of the retainer clip.

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~~15~~. (new) The electrical connector according to claim ~~13~~¹⁸ wherein the feet are selectively positionable with respect to one another to facilitate engagement of the feet with the apertures extending through the female component of the connector.

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²¹
~~16~~. (new) The electrical connector according to claim ~~15~~^{20 19} wherein the handle is adapted to open the retainer clip responsive to the application of a force thereto.

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~~17~~. (new) The electrical connector according to claim ~~13~~¹⁸ wherein the camming members flex the retainer clip into an open configuration upon engagement with the male component of the two part electrical connector to enable the retainer clip to be extended over the two part electrical connector and thereafter release the retainer clip to resiliently clamp the male and female components of the two part electrical connector in engagement with one another.

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~~18~~. (new) The electrical connector according to claim ~~13~~¹⁸ wherein the feet comprise toes which are extendable upwardly adjacent to the second side.

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19. (new) The electrical connector according to claim 18 further comprising a printed circuit board, and wherein the female component is attached to ^{the} printed circuit board and the male component comprises a ribbon cable.

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20. (new) An electrical connector comprising:

- a male component;
- a female component for receiving the male component and having spaced, parallel transversely extending apertures extending from a first side to a second side therethrough;
- a single retainer clip for securing the male component in engagement with the female component of the connector comprising:
 - spaced parallel feet spaced a predetermined distance apart equal to the distance separating the transversely extending apertures through the female component of the connector and having a length extending from the first side to the second side;
 - legs extending upwardly and inwardly from the feet adjacent the first side;
 - male connector engaging arms extending from the ends of the legs remote from the feet parallel to and above the feet and having a length extending transversely across the male connector;
 - camming members extending downwardly from the ends of the male connector engaging arms remote from the legs and positionable adjacent to the second side;
 - means connecting the two sides of the retainer clip; and
 - wherein the feet, the legs, the engaging arms, the camming members, and the connecting means ^{define} a single, continuous wire spring retainer clip having a spring action which

normally biases the retainer clip to hold the male component and the female component of the two part electrical connector suitably engaged with a continuously applied force such that the engagement resists shock and vibrational forces which might otherwise dislodge the engagement therebetween.

²⁶
~~21.~~ (new) The electrical connector according to claim ²⁵~~20~~ wherein the connecting means comprises a handle which facilitates flexure of the engaging arm away from the feet thereby facilitating removal of the retainer clip.

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~~22.~~ (new) The electrical connector according to claim ²⁵~~20~~ wherein the feet are selectively positionable with respect to one another to facilitate engagement of the feet with the apertures extending through the female component of the connector.

²⁸
~~23.~~ (new) The electrical connector according to claim ²⁶~~21~~ wherein the handle is adapted to open the retainer clip responsive to the application of a force thereto.

²⁹
~~24.~~ (new) The electrical connector according to claim ²⁵~~20~~ wherein the camming members flex the retainer clip into an open configuration upon engagement with the male component of the two part electrical connector to enable the retainer clip to be extended over the two part electrical connector and thereafter release the retainer clip to resiliently clamp the male and female components of the two part electrical connector in engagement with one another.

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~~25~~. (new) The electrical connector according to claim ²⁵~~20~~ wherein the feet comprise toes which are extendable upwardly adjacent to the second side.

³¹
~~26~~. (new) The electrical connector according to claim ²⁵~~20~~ further comprising a printed circuit board, and wherein the female component is attached to ^{the}~~a~~ printed circuit board and the male component comprises a ribbon cable.